

Amendment

Responsive to Office Action dated May 13, 2008

REMARKS**Pending Claims**

Claims 1-5 are pending. Claims 1-3 have been amended. No new matter has been added.

Claim for Priority

Applicants respectfully request that the Examiner officially acknowledges the claim for priority of Japanese application No. 2004-214631 filed July 22, 2004 and the safe receipt of the certified priority document.

Claim Rejections Under 35 U.S.C. §103

Claims 1-5 are rejected under 35 U.S.C. §103(a) as being unpatentable over Albrecht et al, U.S. Patent No. 4,392,314, in view of Peterson, U.S. Patent No. 5,611,657 and Yamaguchi et al, U.S. Patent Publication No. 2004/0161326.

The present invention is directed towards a front device including a box member, formed by welding an upper flange, lower flange, left web and right web together, and a boss member located at least at one end of the box member, where the boss member is welded to the ends of the upper flange, lower flange, left web and right web. In particular, the front device includes a face plate portion extending in the longitudinal direction of the box member, a bent plate portion which is bent inward and welded to the boss at the distal end of the bent plate portion, and a reinforcement plate located outside of the bent plate portion.

Therefore, in accordance with the present invention, a double structure reinforcing the distal area of the box member is realized by the bent plate portion and reinforcement plate. Applicants have amended claims 1-3 to clarify that which is regarded as the invention.

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According to claim 1, at least one of the left web and right web is provided with a face plate portion which is extended in the longitudinal direction of the box member and the face plate portion is formed as at least one of the left and right side faces of the box member; and the box member further has a bent plate portion bent inward which extends from the end of the face plate portion in the longitudinal direction to the boss, and which is welded to the boss at the distal end of the bent plate portion. The front device also has a reinforcement plate located outside of the bent plate portion and welded to the one side web and the boss respectively; where the portion of the box member to be welded to the boss forms a double structure by using the bent plate portion and the reinforcement plate.

According to claim 2, at least one of the upper flange and the lower flange is provided with a face plate portion which is extended in the longitudinal direction of the box member and formed as at least one of the upper side face and the lower side face of the box member; and the box member further has a bent plate portion bent inward and which extends from the end of the longitudinal direction of the face plate portion to the boss, and which is welded to the boss at the distal end of the bent plate portion. The front device also has a reinforcement plate, located outside of the bent plate portion and welded to the side flange and the boss respectively, where the portion of the box member to be welded to the boss forms a double structure by use of the bent plate portion and the reinforcement plate.

According to claim 3, at least one of the left web and right web is provided with a face plate portion which is extended in the longitudinal direction of the box member and the face plate portion is formed as at least one of the left and right side faces of the box member; and the box member further has a first bent plate portion bent inward which extends from the end of the longitudinal direction of the face plate portion to the boss, and which is welded to the boss at the distal end of the bent plate portion. Additionally, at least one of the upper

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flange and the lower flange is provided with a face plate portion which is extended in the longitudinal direction of the box member and formed as at least one of the upper side face and the lower side face of the box member, and a second bent plate portion bent inward and extended from the end of the longitudinal direction of the face plate portion to the boss, and welded to the boss at the distal end of the bent plate portion. The front device also has first and second reinforcement plates located outside of the first and second bent plate portions respectively. The first reinforcement plate is welded to the one side web and the boss respectively, whereas the second reinforcement plate is welded to the one side flange and the boss respectively.

Support for amended claim 1 is made with reference to Figures 3 through 8 of the Specification, for example. An upper boom 11 is shown having a box member 12 and a boss 19 disposed at a distal end of the upper boom and a boss 18 disposed at a base end of the upper boom. See page 14, lines 20-22 of the Specification, for example. The box member is constituted of an upper flange 13, a lower flange 14, a left web 15 and a right web 16. Upper flange 13 serves as the upper face of the box member 12, while lower flange 14 serves as the lower face of the box member 12. See Fig. 3 and page 15, lines 2-15 of the Specification, for example. Side face plate portion 15A is located in the middle portion of the box member 12, and is extended in the longitudinal direction. See page 16, lines 12-15 of the Specification, for example. Two bent plate portions 15B, 15C are arranged inside of individual left reinforcement plates 20, and are extended in the longitudinal direction of the box member 12. Furthermore, the bent plate portions are bent inward in the direction of the right web 16, and are positioned between the upper flange 13 and the lower flange 14. See page 16, lines 17-23 of the Specification, for example. As an example of the welding of a bent plate portion, bent plate portion 15C is welded to the boss 19 at the distal end of the bent plate portion. A

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reinforcement plate 20 is provided outside of the bent plate portions 15B, 15C of the left web 15, for example. See page 19, lines 8-10 of the Specification. The left reinforcement plates 20, together with right reinforcement plates 21 provide a double structure for the portions of the base and distal ends of the upper boom 11 where the bosses 18,19 are welded with box member 12, in order to reinforce these ends. See page 19, lines 14-18 and page 6, lines 19-25 of the Specification, for example.

Additionally, support for amended claim 2 is made with reference to Figure 12, for example. Upper flange 43 and lower flange 44 of the box member 41 are welded to the bosses 47, 48. Also the left and right webs 45, 46 are welded to the bosses. See page 31, lines 4-14 of the Specification, for example. Upper flange 43 and lower flange 44 are depicted having reinforcement plates 49,50 located outward of bent plate portions 43C, 44C and welded to boss 48, for example at the distal end. The same arrangement is provided at the base end of the box member 41. In regards to claim 3, support for amended claim 3 is made with reference to Figures 14-16, for example. As shown at the distal end of box member 51, bent plate portions 53C, 54C, 56C and 55C are provided for upper flange 53, lower flange 54, left web 55, and right web 56. These are welded to the boss 58. A similar arrangement is provided at the base end of the box member. See page 34, lines 8-18 of the Specification, for example.

Albrecht, Peterson, and Yamaguchi are relied upon for rejecting claims 1-5. The Albrecht reference is relied upon to show a top flange and bottom flange. Albrecht discloses a boom having multiple plates 154, 156, 158, and 160 which form end plate assembly 152. Albrecht only discloses left and right side plates 122 which are bent inward at the distal end but not the base end of the boom arm. See Fig. 3 and col. 5, lines 23-30. Further, Albrecht fails to disclose a reinforcement plate located outside of the bent plate portion, where the

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portion of the box member to be welded to the boss forms a double structure by use of the bent plate portion and the reinforcement plate, as claimed by Applicants.

Peterson is relied upon to disclose the use of reinforcing plates. The reinforcing plates 74, 76, as disclosed by Peterson, are shown placed on only the right and left sides of the boom arm 56. See Fig. 3. The reinforcement plates serve to reinforce the central portion of the boom arm 56. Specifically, the reinforcement plates are placed at the junction between the upper arm 58 and the lower arm 60. See col. 3, lines 32-42 of Peterson. Furthermore, Peterson discloses reinforcement plates that do not extend to the ends of the boom arm, and are not in contact with the bosses 83,122. See Fig. 3 and col. 3, lines 49-55. Accordingly, Peterson fails to disclose a reinforcement plate located outside of the bent plate portion, where the portion of the box member to be welded to the boss forms a double structure by use of the bent plate portion and the reinforcement plate, as claimed by Applicants.

Additionally, Yamaguchi is relied upon to disclose placing reinforcement plates inside of a boom arm structure. The boom arm 60 is shown in Fig. 6A of Yamaguchi is shown in cross-section in Fig. 6B. Yamaguchi discloses in Fig. 9A, bent reinforcement members 122a, 122b, 122c, 122d positioned within the boom structure. Yamaguchi also discloses that the reinforcement members are positioned inside of L-shaped sections 123a, 123b, 123c, 123d. See para. [0069]. However, the reinforcement members are configured to provide lateral support across the boom while also opposing respective corners of the boom cross-section. See Fig. 9A, 9B and 9C. Applicants note that reinforcement members 122, for example in Fig. 9A, are not equivalent to the bent plate portions, as claimed by Applicants. Accordingly, Yamaguchi fails to disclose a bent plate portion bent inward and extended from the end of the longitudinal direction of the face plate portion of the box member and welded

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to the boss. In addition, Yamaguchi fails to make up for the deficiencies noted in Albrecht and Peterson.

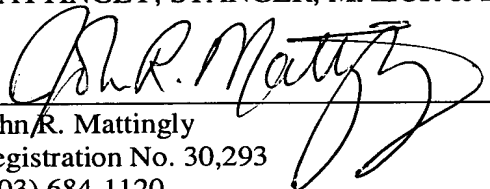
Accordingly, the combination of Albrecht in view of Peterson and Yamaguchi does not render amended claims 1-5 unpatentable under 35 U.S.C. §103(a), and therefore the rejection should be withdrawn.

Conclusion

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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